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ABSTRACT

This study examines the effects of early experiences and behaviors on course failure, grade point average, and educational aspirations, analyzing survey data gathered from 20 high schools participating in a whole-school reform initiative aimed at helping troubled high schools. All of the schools served mainly poor and minority students. Students answered questions about their early high school experiences and outlook on their educational futures. Teachers answered questions about their perceptions of various aspects of the conditions of education in comprehensive high schools. Analysis of the student data indicated that while family background characteristics such as socioeconomic status, race/ethnicity, and gender played an important role in students' educational success, students' experiences and behaviors in ninth grade (including level of adjustment to high school, teacher support, and participation on interdisciplinary teams) had significantly positive correlations with student outcomes. Conversely, the effects of poor attendance and of being retained in, or prior to, ninth grade were negatively related to students' educational outcomes. An appendix presents study results and data. (Contains 13 references.) (SM)

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At-Risk Students During the First Year of High School:

Navigating Treacherous Waters

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At-Risk Students During the First Year of High School:

Navigating Treacherous Waters

Abstract

The first year of high school is a time when adolescents take either a critical step towards graduation and a successful adult life, or conversely, toward dropping out of school and a future life of uncertainty. Analyzing survey data gathered from 20 high schools participating in a whole-school reform initiative, this study examines the effects of early experiences and behaviors on course failure, grade point averages, and educational aspirations. The author finds that several factors such as the level of adjustment to high school, teacher support, and participation on interdisciplinary teams have significantly positive correlations with student outcomes, controlling on students' parental education, race-ethnicity, and gender. Conversely, the effects of being retained in, or prior to, ninth grade and poor attendance were negatively related to the educational outcomes under study.

There are several points in an adolescent's transition from middle school to high school and into early adulthood where there appears to be an increased risk for goals and educational aspirations to go awry. For many poor and ethnic-minority students at risk of educational failure, the ninth grade year, typically the first year of high school, can be viewed as a watershed in this regard. The first year of high school is a time when at-risk adolescents take either a critical step towards graduation and a successful adult life, or conversely, toward dropping out of school and a life of uncertainty. Although the daily decisions adolescents make and the actions they take can influence their educational and career futures, there are many structural and historical factors having equal or greater weight upon their success in school. At-risk students attending public comprehensive high schools in large, inner-city school districts often have limited opportunities to be academically successful because of a complex array of reasons including a fundamental lack of educational resources available at school, sporadic or non-existent exposure to quality instruction, and a dysfunctional school organizations.

Conceptual Framework

Ninth grade students begin high school after arriving from middle school environments that are largely student-centered, and where classroom teachers often team up and work together for the benefit of individual students. There are many advantages of collective effort among teachers such as the ability to provide extra help to struggling students, the ability to address individual needs of students, and the flexibility to handle student's personal problems that can interfere with learning. Nevertheless, after completing middle school, young adolescents must make a major transition to relatively impersonal high schools, where new students often feel alienated and unsure of themselves. Unfortunately, in many urban school districts serving predominately African American and Latino students at-risk, little is done

systemically and programmatically to smooth the transition from middle school to high school. Rather than attempting to create school environments that nurtures and support all students in performing at a high level, it is common practice for high schools to instead diagnose entering students' level of achievement and place them into tracks or ability groups based solely upon their testing. Although the detrimental effects of tracking and ability-grouping have been well documented in the research literature (Braddock & Slavin, 1993; Oakes, 1985; Pallas et al., 1994), there is a lingering absence of viable research-based alternatives to tracking. Thus, serious reform efforts to "detracking" American high schools have perhaps generated as many problems as they solved. Moreover, researchers and policy makers who espouse altogether eliminating tracking run the risk of losing credibility among practitioners and school leaders who are ultimately faced with implementing new educational reforms. This is especially true among classroom teachers who would ultimately be held accountable for educating students having widely varying talents and abilities.

A Critical Year: The First Year of High School

The present study examines the degree to which ninth grade student's early acclamation to high school influences several educational outcomes, namely whether they fail courses, grade point averages, and educational aspirations. In a general sense, the purpose of the study was to investigate whether students' perceptions of their academic self-confidence, certain behaviors such as attending school regularly and study habits, along with the presence of school-based support such as teacher teaming, effects early success or failure in high school. Ninth grade is viewed as a critical year because a successful transition into and out of it presents the first and most daunting task for at-risk adolescents. The results of the study has implications for high school reform efforts designed to raise achievement

and school engagement among at-risk students.

Of course it can be said that many social, socioeconomic, and psychological factors influence a student's destiny in school. To be sure, the various determinants of high school survival rates exist on several levels including within the social organization of the school such as tracking and class size, broader socioeconomic conditions such as poverty and urban decay, and micro-level social psychological factors such as the motivation to learn and aspirations to pursue higher social status. Numerous studies have documented effects of these determinants on various student outcomes such as poor performance, disengagement, and dropping out (Fine, 1986; Jordan et al., 1996; Natriello et al., 1990; Roderick, 1993; Rumberger & Larson, 1994; and Valdivieso & Nicolau, 1994).

Having said this, and in light of the multiple explanations for individual success or failure, one of the main reasons why African American and Latino adolescents attending urban high schools struggle and sometimes fail during ninth grade is because they are disproportionate academically unprepared to tackle to rigor of the secondary school curriculum. This stems, perhaps, from many years of exposure to ineffective schooling prior to high school, along with relatively weak family and community support, and institutionalized racism and classism. Furthermore, in addition to inadequate content knowledge of core subjects such as English and mathematics as they transition out of middle school, at-risk students also lack fundamental knowledge and information pertaining to how to successfully navigate their way through high school.

In a recent study of high schools large urban school district, Balfanz and Legters (1998) depicted an average high school located in a mid-Atlantic district where 65% of the ninth grade students failed to pass a basic 6th grade-level state-wide mathematics test. Performing basic

computational functions such as dividing and multiplying fractions, along with simple problem-solving items were the most challenging components of this rudimentary test. Not surprisingly, in one high school highlighted by Balfanz and Legters the results for the writing tests were similar to math. Indeed, within this district, and in similar urban districts serving poor and minority students, many adolescents begin high school having reading, writing, and mathematical ability several years behind grade-level. Low academic starting points for critical masses of ninth grade students in comprehensive high schools poses many challenges for educators and policymakers. Seldom are comprehensive high schools organized appropriately to bring low-achieving students up to speed without sacrificing the needs of students who actually begin high school preforming at grade-level (Jordan et al., 2000).

Along with performing satisfactorily academically, which can be difficult enough given the opportunities to learn structure in inner-city high schools, adolescents must also master the "politics" of being a high school student in order to be academically successful. That is, new students must learn about various important details such the credit game (Carnegie units needed for graduation), attendance policies, exit exams, college boards, and making allies among school staff and critical and supportive friendships among fellow students. Thus, bolstering academic skills as well as acquiring fundamental knowledge about the functioning of high school are critical for success during ninth grade. For many at-risk high school students these lessons are learned too late, and sometimes not at all.

Although many at-risk adolescents struggle during the first year of high school because of their poor preparation and institutional inexperience, there are perhaps several other critical affective and structural factors that also play a role, as alluded to above. According to the report of the National Association of Secondary School Principals, Breaking Ranks (1996), anonymity and apathy

contributes to the lack of success in high school. Anonymity is sometimes simply an outgrowth of the sheer size of comprehensive high schools, coupled with rigid departmentalization and having a subject-specific, rather than student-centered orientation. It is not uncommon in large urban comprehensive high schools for teachers and administrative staff to encounter students whose name they do not know, and with whom they have little rapport. As a result, students interpret the anonymity they feel as an absence of caring and support among school people and eventually divest interest in doing academic work. In the worse cases, they develop an unhealthy contempt for schooling. Similarly, apathy has many causes including students' perception of the irrelevancy of the curriculum. That is, high school students sometimes find it difficult to connect course content to real-world experiences that increase their quality of life or places them in a good position for future growth and development.

Data and Methods

Evidence for the present study was drawn from recent student survey data collected as part of an ongoing research and development project aimed at reforming troubled high schools. During spring 2000, in-depth pencil and paper surveys were administered to students and teachers in 20 comprehensive, public high schools located in 12 school districts across the Northeast, Midwest, Mid-Atlantic and Western United States participating in the R & D project (Appendix A). A battery of questionnaire items on the student survey was devoted specifically to ninth graders, assessing their early high school experiences and outlook on their educational futures. As I elaborate below, these questionnaire items were used to build conceptual constructs upon which the analysis and findings are

based.[1] While most of the schools were located in large, urban districts, some were rural and on urban fringes, and one was and American Indian school. What all of the schools have in common is that they serve mostly poor and minority students, many of whom are at high risk for educational failure and dropout. Indeed, several indices of ineffective educational conditions such as high dropout rates, low achievement, high faculty turnover, unhealthy school climate, and low daily attendance exist to some degree at each of these schools.

It should be pointed out that the high schools participating in the study were not drawn from a random sampling of urban high schools and are not representative of all American high schools. However, a mix of high schools are included in the analysis so that some broader inferences can be drawn based upon general characteristics of the schools. There were common features stringing together schools and students in the analysis. For example, each of the study sites were either planning to, or had just begun implementing, a nationally recognized whole-school reform design initiative created by educational researchers at Johns Hopkins University–Center for Research on the Education of Students Placed At Risk (*CRESPAR*), known as the Talent Development High School Model (see Jordan, et al. (2000) for a detailed description of this school reform initiative). A comprehensive package of interventions aimed at increasing academic and social support for ninth grade students is a central aspect of the Hopkins reform model. In fact, in many Talent Development High Schools ninth grade students are an overwhelming numerical majority because of high rates of grade retention, course

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[1]Teacher surveys were also administered in the 20 sites. These survey instruments included teachers' perceptions about various aspects of the conditions of education in comprehensive high schools. However, the present study does not examine teacher responses as a function of student outcomes.

failures and dropout rates. Having a large number of ninth grade students who are "repeaters" (repeating ninth grade for at least a second time) is a fairly common occur across the 20 sites in the study. As part of the ongoing evaluation of the Talent Development High School implementation, contextual information such as size, racial composition, percentage of students receiving free or reduced price lunch, and percentage of Special Education and Low-English Proficiency (LEP) students were collected along with survey data in each of the sites.

Within the high school reform community, an increasingly popular strategy for helping adolescents to make a smooth transition from middle school to high school is placing ninth grade students in a relatively self-contained academy comprised of interdisciplinary teacher teams. When fully implemented, teacher teams share the same group of students, have a common planning time, and offer multi-layered instruction "double doses" in mathematics and English. I should pause briefly to emphasize that math and English curriculum development is at the core of high school reform because they, in essence, are arguably the most fundamental subjects for student's overall achievement. It is frequently the case among at-risk students that poor performance in other subjects such as science and history can be traced back to math and English, or even more basic, to reading and arithmetic. In light of this, the curricular reforms for the Talent Development High School have been focused, thus far, upon mathematics and English. Professional development and instructional materials were provided by the *CRESPAR* Center at Johns Hopkins in order to facilitate implementation of several new instructional strategies, along with the development of interdisciplinary teacher teams in the ninth grade. The effects of student membership in interdisciplinary teams is elaborated in the analysis below.

A student survey instrument containing 147-items was administered school-wide with an

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average response rate across each of the schools of 44 percent. The survey was designed to provide rich information about a variety of issues affecting the educational experiences of at-risk high school students. In addition to asking questions about students' perceptions and schooling experiences at the outset of high school and family background characteristics, the survey covered several topics including students' general perceptions of school climate, teacher-student relationships, instructional activities in English and math classes, educational and career aspirations, institutional support for students, extra-help opportunities for students who need them, and possible causes of course failures and low grades. The teacher survey contained many items covering topics such as instructional practices, staff collegiality, administrative support, and school climate. In addition, there were sections devoted specifically to support for ninth grade students, along with professional experiences and other background characteristics. An in-depth analysis examining both student and teacher sources of data together is currently being planned. The data analyzed in the present study focuses upon ninth grade students' own account of their early high school experiences.

[PLACE TABLE 1 ABOUT HERE]

Table 1 shows descriptive statistics of the variables examined in the study. Means, standard deviations and the number of cases are depicted for the full sample, alongside marginal for the ninth grade sample. Although not presented on this table, the grand total of students participating in the survey was 13,616. There are three dependent variables: (1) whether a student failed at least one course; (2) self-reported grade point average; and (3) a composite measure of educational aspirations. Details of construction procedures used to create the composite measures are elaborated in Appendix B and outlined in the next section.

The descriptive analysis reveals several pieces of information about students participating in the study. Within the full sample of grades 9 to 12 (N=10,841), a mean of .37, or 37 percent of the students said they failed one or more classes in high school. Among ninth graders (N=3,403), however, 35% reported failing a class. A 2% difference in the means provide some evidence that high school failure in these sites might often occurs early on. It levels off overtime, perhaps, either because students adjust to the rigor of high school course work, or they repeat ninth grade, or they eventually drop out school. However, because the data are cross-sectional and somewhat limited, this argument cannot be make very strongly.

The descriptive statistics for self-reported GPA reveals that the study sample resembles the marginals often found in transcript data set that are representative of a national population. Students were asked to estimate their report card grades in high school (converting numerical scales based on 100 to a 4-point letter grade scale). GPA, as measured in the present analysis, has a value of 4 for "mostly As" (or a numerical average of 90 to 100), and a value of 3 for "mostly Bs", and so forth. As shown on Table 1, the mean reported grade for the full sample was 2.55 (mid-Cs) and for ninth graders 2.48 (also mid-Cs). This resulting distribution of GPA was expected and is consistent with other studies that examine report card grades, both self-reported as well as data drawn from actual transcripts.

The independent variables in the study include dichotomous measures of gender and ethnic-racial background, parental level of education as a proxy for SES, a categorical estimated number of days absent from school, whether a student is a member of a ninth grade interdisciplinary teacher team, whether a student was retained either in or prior to the ninth grade, and several composite scales

measuring students perceptions of their schooling experiences. The means for gender suggest that the survey has captured a roughly equivalent number of males and females (51% female and 49% male in the full sample and the reverse of these percentages in grade 9). Among the race -ethnicity items, the descriptive results also reveal the sample consists of predominately African American students (60% for the full sample and 64% in grade 9), followed by White students (17% in the full sample; 11% in grade 9) and Latino students (12% full; and 14% in grade 9). In addition, about 21% of the ninth grade students were members of interdisciplinary teacher teams and 17% report being retained in or before grade 9.

Educational Aspirations. Student's educational aspirations was conceptualized both as a predictor of student outcomes as well as a dependent variable itself. One of the reasons why I chose to conceptualize aspirations in this way is because it is a multidimensional and dynamic variable. On the one hand, it is a goal to be strived for by students, parents and schools. And on the other, educational aspirations is also a precondition which can, in real-life, help to determine the likelihood of achieving other educational and career goals.

The actual construct used in the analysis to assess students' educational aspirations was operationalized as a 4-item scale having a standardized reliability coefficient (or Cronbach's alpha) of α=.70. The procedure I used for standardizing this measure, and other composite variables, was a two-stage process where the various items in the scale were converted into z-scores and combined by averaging. Each of the composite variables in the study were created in this way (Appendix B). To construct the measure *Educational Aspirations*, four questions were asked of students: (a) "As things stand now, far in school do you think you will get?" (ranging from dropping out to graduate or

professional degree); (b) "Which of the following do you believe is most likely to happen?" (ranging from graduating early to "not sure" when the respondent will graduate); (c) "How sure are you that you will graduate from high school?" (ranging from "very sure you will" to "very sure you won't" graduate); and (d) "How sure are you that you will go to a two-year or four-year college after leaving high school?" (ranging from "very sure you will" to "very sure you won't" go to college). The next sections describes the core independent variables.

The Composite Independent Variables Measuring Student's Perceptions

The core of the analysis examines the effects of several student-level conceptual constructs on the outcomes described earlier, controlling on gender, race-ethnicity and SES. The variable constructs are referred to as: (1) School Safety; (2) Teacher Support; (3) Class Participation; (4) School Turbulence; (5) School Climate; (6) Adjustment to High School; and (7) Study Habits. The items used to build the later constructs, *Adjustment to High School* and *Study Habits*, were asked only of ninth grade students. Here, I will give brief descriptions of the construct examined in the study in order to better facilitate the interpretation and discussion of major findings.

School Safety. This is a 10-item scale measuring students' perception of school safety. Using a 4-point likert-type scale where "strongly disagree" carries the value of "1" and "strongly agree" has a value of "4," students were asked to report the extent to which they agreed or disagreed with several statements about their schooling experiences. The statements items such as "Students get along well with teachers", "Most teachers you pass in the hallway know your name", "Rules for student behavior are clear", and "You feel safe at this school." Similar to the construction of *Educational Aspirations*, two-step process was used to create this measure as well as each of the constructs in the analysis.

First, the various items were standardized (converted into z-scores). It was sometimes necessary to reverse code certain items stated in a way that a negative responses would yield higher numerical values. All reverse was done prior to computing z-scores. Second, the *School Safety* variable was calculated as the mean of each standardized items. Thus, the reader will notice on Table 1 that each of the composite variables have means of about zero. Although the individual items in the scales have standard deviations close to 1 (this is not depicted on the table), the standard deviations of the resulting composite variables are less than 1 because each one is, in fact, an average of means. By default, in cases where a missing value was present for an item in the scale, the measures were computed using the remaining non-missing items. The resulting standardized reliability coefficient for the *School Safety* scale was α=.64.

Teacher Support. Teacher support was operationalized using an 11-item scale assessing students' perception of support from their teachers. The two-step process of building standardized variables described above was repeated here for the *Teacher Support* variable. Students were asked questions such as: "Think about the teachers with whom you are currently taking courses. How many of your teachers . . . ?" "really listen to what you have to say?" "care about you as a person?" "show respect for their students?" "know your name?" "would give you extra help if you needed it?" The response categories were: "None", "One or Two", "Most", and "All". The standardized reliability coefficient for this 10-item scale was α=.80.

Class Participation. Students' level of classroom participation in English and math was measured using a 6-item scale. It consists of three questions asked separately about English and math class. The reliability coefficient for *Class Participation* was α=.77. The item in the scale were:

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"About how often have the following happened in your MATH (and ENGLISH) class this school year?" "You paid attention in class", "You worked as hard as you could in class", "You felt smart and confident about something.." The response categories were: "Several Times per Week", "Once or Twice per Week", "Once or Twice per Month", and "Never."

Classroom Turbulence. This measure was operationalized as a rough estimate of instructional resources available for students at school. This measure was constructed based upon student responses to for several aspects about their classes. It addresses the absence of relatively important instructional and structural resources. Students were asked to: "Please answer the following questions about your classes this school year. In how many of your classes. . . ? (a) were there not enough chairs or desks for students? (b) was the teacher you started with replaced by another teacher? (c) were there not enough textbooks for each student ? (d) were there not enough supplies such as calculators, rulers, or microscopes to go around?" The response categories for these questions were "None", "One", "Two", "Three", and "More Than 3." The standardized reliability coefficient for *Classroom Turbulence* was α=.67.

School Climate. Students' general perception of school climate was measured using a 13-item likert-type scale, which yielded a reliability coefficient of α=.87. The same two-step variable construction process described above was used again to construct this measure. The items were as follows: "Please tell us how much each of the following is a problem in your school." The responses included items such as: "Students coming late to school", "Fighting among students", "Vandalism of school property such as graffiti", "Students who are absent a lot", and "Students who are not interested in learning." The four response categories were: "No Problem", "Minor Problem", "Moderate

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Problem" and "Serious Problem." In this case, each of the 13 items were reverse coded so that higher values on the *School Climate* variable can be interpreted as a student's more positive perception of a school's climate.

Adjustment to High School. The remaining composite measures, *Adjustment to High School* and *Study Habits*, were constructed from items asked only of ninth grade students. The questions used to create the *Adjustment to High School* asked ninth graders to state the degree to which they agreed or disagreed with six statements on a 4-point likert-type scale. The statements were: (a) "You have adjusted well to being in high school," (b) "When you are having problems in class your teacher usually helps," (c) "Teachers encourage you to consider going to college when you graduate from high school," (d) "Your study skills and test taking skills have improved since the beginning of this school year," (e) "In school, most of your friends care about getting good grades," and (f) "Your closest friends care about coming to school each day." The standardized reliability coefficient for *Adjustment to High School* was α=.73.

Study Habits. Finally, ninth grade students' study habits was measured using a 4-Item scale where students were asked: "Since the beginning of this school year, how often have the following things happened to you? (a) You were not exactly sure how to study for a test, (b) You couldn't figure out how much time was needed to complete an assignment, (c)You were confused about how to take notes in class," and (d) "You forgot when your assignments or homework were due." The five response categories for these items were "Always", "Often", "Sometimes", "Seldom", and "Never" and the reliability coefficient was α=.74.

Results of the Multivariate Analysis

Finding from the multivariate analysis suggests organizational factors such as students' perceptions of teacher support and school safety, and their membership on interdisciplinary teams, as well as social psychological factors such as adjustment to high school and study habits have small, but consistently positive correlations with student outcomes. Table 2 shows maximum likelihood estimates of effect of log-odds on failing a course during ninth grade. The first is an intercept-only model. Next, students' background characteristics are entered in Model II, while days absent and retention are entered in Model III, and the various composite measures are entered in the full model (Model IV). Thus, the full model for the logistic regression equation can be expressed as:

$$\ln(P_{\text{failed}} / P_{\text{did not fail}}) = -1.34 - .10(\textit{Parental Educ}) - .07(\textit{Female}) + .13(\textit{Black}) + \ldots - .20(\textit{Team})$$

[PLACE TABLE 2 ABOUT HERE]

In Model II, parental education and the intercept yield the only significant effects on the log-odds of failing a course. The magnitude of the parameter estimates for female students and Black students are the same as parents' education (-.16 and .16, respectively) but these coefficients are not statistically significant. This could be explained by differences in the metrics for each of the variables in question. Whereas the race-ethnicity and gender variables are dummy variables having a value of either zero or one, parental education is an average of z-scores for two variables (mother's level of education and father's education). The significant negative relationship between parental education and the dependent variable suggest that students whose parents are more educated generally are less likely to fail a course in ninth grade. This equation, however, revealed no significant race or gender differences for effects on failing a course.

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The effects of daily attendance on course failure are revealed in Model III, where it is first introduced, and in the full model. The number of days a student was absent from school had the greatest effect upon the log-odds of failing a course among the independent variables in this logistic regression model. This finding is consistent with both prior research and conventional wisdom of classroom teachers and school leaders who place chronic student absenteeism at the top of the list of determinants of academic failure. In Model IV, student daily absences, along with *Study Habits* and *Educational Aspirations* had significant impacts on the log-odds of whether or not a student failed a course. The negative direction of the estimates suggest both good study habits and high aspirations have an inverse relationship with course failure. Put simply, the results of this analysis suggest students who report studying hard in school and being confident in educational futures have fewer occurrences of course failure.

Although the remaining independent variables in the equation (*Teacher Support, School Safety, Adjustment to High School,* and *Interdisciplinary Team*) did not reach the level of statistical significance, each had an inverse relationship with course failure. In addition, the Chi-squared improvement of 31.56 (98.08 minus 66.52) from Model III to Model IV suggests the introduction of the composite scales somewhat increases the overall predictive power of the equation.

Taken togther, this logistic regression equation provides empirical support for intuitive knowledge held by seasoned policy makers and practitioners. That is, creating a relatively safe learning environment in high school where teachers nurture, stimulate and challenge students, and where the transition from middle school is made smooth, can go a long way in reducing academic failure among at-risk adolescents.

Effects on self-reported grade point averages are shown in Table 3. The structure of the ordinary least squares (OLS) regression models and the logistic regression are very similar, except the composite measure of *Class Participation* was substituted for students perception of *School Safety*.[2] In Model I (Table 3), each of the gender, race and SES variables appear to have significant relationships with GPA at either the $p<.05$ or $p<.01$ levels. The results suggests females have higher grades than males (β=.08; t=4.13); Black students tend to get lower grades than non-Blacks (β=-.09; t=-3.15); Hispanic students lower than non-Hispanics (β=-.05; t=-2.01); and White students lower than non-Whites (β=.05; t=1.96). Just as in the logistic regression models measuring the effect on course failure, the importance of daily attendance is underscored in this OLS regression equation. However, unlike the results of the logistic equation, here, being retained either in or before ninth grade was negatively related to self-reported GPA, at least in Model II (β=-.07; t=3.70). But this effect washes out in the full model and becomes statistically insignificant.

[PLACE TABLE 3 ABOUT HERE]

In the full model, the negative correlation of GPA and being a Black student (β=-11; t=4.04) and the positive correlation of White and GPA (β=.05; t=1.95) are the only remaining significant background characteristics. The standardized regression coefficients for gender, SES (parental education), and Hispanic status fall from significant levels. Experiencing grade retention is also no longer significant here. However, in addition to the number of days absent, which has the largest effect,

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[2] A few of the composite scales previously described, such as perception of *School Climate* were introduced in the preliminary multivariate analysis but were subsequently removed because their effects were indistinguishable from zero.

several of the composite variables showed significant relationships with GPA. Among them, *Educational Aspirations* (β=.20; t=10.42) had the greatest effects upon grades, followed by *Study Habits* (β=.09; t=4.83); *Teacher Support* (β=.07; t=3.87) ; and *Adjustment to High School* (β=.06; t=3.01). In addition, student who participated in *Interdisciplinary Teams*, reported earning significantly higher grades than those who did not (β=.04; t=2.61).

The final OLS regression models examines effects on educational aspirations. In education research and theory, cause is often effect and effect is often cause. Thus, as mentioned above, the present study investigates the impact of students' educational aspirations as a explanatory variable for other student outcomes (namely, course failure and GPA), and also as an educational outcome in its own right.

[PLACE TABLE 4 ABOUT HERE]

Table 4 presents OLS coefficients from the regression of ninth grade students' perception on their educational aspirations. As shown in Model I, female students (β=.14; t=7.55) and students whose parents' have higher levels of educational attainment (β=.19; t=10.35), report having higher levels of educational aspirations. Also, Black students report higher educational aspirations than non-Black students. Interestingly, in the full model, Black Students is the only ethnic-racial category to be significant. Model II reveals that GPA has a strong positive relationship with *Educational Aspirations* (β=.26; t=14.41), while both being retained and often absent from school had negative relationships (β=-.16; t=-9.28 and β=-.12; t=-7.09, respectively). This might suggest students with higher educational aspirations tend to earn good grades, which also reduces the likelihood of being retained or having to repeat the same grades. In addition, they attend school on a regular basis.

As illustrated on Table 4, the pattern of results stays fairly consistent from Model II to the full model. However, several of the students' perception composite scales contribute significantly to the equation. The overall contribution to the R^2 of the six variables introduced to the equation in Model III was .092. The resulting coefficients for *Class Participation, Adjustment to High School,* and *Study Habits* were positively and significantly related to the dependent variable. In fact, *Class Participation* was most strongly related to student's educational aspirations, stronger even than GPA (β=.21; t=11.58 compared to β=.18; t=10.43). This finding was somewhat interesting because the items included in the *Class Participation* scale (Appendix B) address not only whether a student reported paying attention in class, but also the degree to which he or she works hard and have confidence in his or her abilities. Finally, although this finding is not statistically significant, the coefficient for student membership on *Interdisciplinary Teams* suggest that those who participated on ninth grade teams had slightly higher levels of educational aspirations than those who were not.

Discussion

The purpose of this study was to investigate critical aspects of early high school experiences and behaviors for at-risk adolescents, explicating students' perceptions of several factors, along with institutional practices designed to smooth the transition for ninth grade students. Using survey data drawn from 20 comprehensive high schools that are currently implementing, or planning, whole school reform, the study attempts to provides insights on self-reported experiences of adolescents near the close of their first year of high school. Overall, the study represents an effort to lend empirical support for, or critique of, educational practices currently being used also to further develop practice, policy and further research in this area. Ultimately, the long range goal of this research is to begin to a systemic

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process of ameliorating potential pitfalls facing at-risk adolescents and youth of color entering comprehensive high schools.

Conceivably, the empirical findings of the study may come as no surprise to educators and researchers who are familiar with real-life problems in comprehensive high schools. Rather, the results, in fact, underscore conventional wisdom held by practitioners, school leaders and policy makers. That is, while family background characteristics, such as gender, race-ethnicity, and SES play an important role in the educational success or failure of high school students, students' early experiences and behaviors at the outset of high school (ninth grade), and institutional support can make a significant difference. For example, as elaborated in this study and supported by statistical evidence, students with higher levels of educational aspirations and good study habits are less likely to fail a course during the first year of high school than their school-mates with lower aspirations and poor habits. In addition, students who are frequently absent from school are more likely to fail courses and also tend to have lower grade point averages.

Unfortunately, because of the cross-sectional nature of the study it is not possible to draw causal inferences based solely upon the results of the regressions analysis. At the very least, in order to convince some one that *X* causes *Y*, it necessary to show that *X* was present prior to *Y*, and in addition, *X* had an independent and significant direct, or indirect, impact on *Y*. Having said this, however, the finding of the study reveal several significant correlational relationships (both linear and log-linear) between the student outcomes and the various composite measures of students' perceptions of their schooling experiences. Plans for the next steps to build upon the early finding are currently being developed. Analysis of longitudinal data on students, teachers and school context that will be gathered

as the high school sites move further into implementation of whole-school reform will be ideally suited to extend this study and examine casual linkages.

The effects of one component of the high school reform initiative, interdisciplinary teaming, should be mentioned in closing. A common organizational practice designed to bolster students' chances of success, the implementation of interdisciplinary teams of teacher who share the same students, had a positive relationship with student outcomes and was significant in at least one equation. Although the effects interdisciplinary teams were small, this is an encouraging finding for educators because it provides evidence that responding directly to the ninth grade students by organizing teachers in a student-centered, rather than subject-centered way stands a chance of improving opportunities for academic success.

Finally, this study represented a first step in analyzing a rich data base of information on a set of 20 comprehensive high schools undergoing whole-school reform. Further study using the student data, along with teacher's experiences and contextual factors that are also known to influence various educational outcomes will add greater depth and insight to these findings and perhaps generate new findings. Analyzing a multi-leveled data source would allow a fuller examination of complex nuances that were not fully explored in the present study. Still, notwithstanding its limitations, the findings of the present study adds empirical support for conventional wisdom and puts us closer to developing solutions to failure in high school among at-risk students.

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APPENDIX A School Districts, Student and Teacher Participants in the Study (Response Rate: *Students = 44%; Teachers = 47%*)

District	N of Schools	N of Students Surveyed	N of Teachers Surveyed
Baltimore, MD	5	2383	113
Cleveland, OH	1	555	32
Detroit, MI	2	2011	165
Milwaukee, WI	1	762	93
Muskegon, MI	1	1076	***
New York, NY	1	926	71
Newark, NJ	1	809	**
Northridge, UT	1	1183	23
Philadelphia, PA	4	1431	142
Reading, PA	1	1183	121
West Palm Beach, FL	1	915	61
Wingate, NM	1	382	***
Total	**20**	**13616**	**821**

APPENDIX B Descriptions and Construction Procedures for Variables Examined in the Study

Students' Perception of School Safety (10-items)

Variable Name: SAFETY

Response Categories: 1=Strongly Disagree; 2=Disagree; 3=Agree; 4=Strongly Agree

Procedure: A two-step process was used to construct this measure. First, each of the items were standardized (converted into z-scores). Next, the SAFETY variable was calculated as the mean of each standardized item. Items "G", "H","I", and "J" were reverse coded. In cases where a missing value existed for an item in the scale, this measure and each of the variables below, was computed using the remaining non-missing items.

Standardized Reliability Alpha =.6425

"Please tell us how much you agree or disagree with each of the following statements about your school."

A. Students get along well with teachers.

B. Most teachers you pass in the hallway know your name

C. Rules for student behavior are clear.

D. You feel safe at this school.

E. Classrooms and hallways are kept clean.

F. Misbehaving students often get in trouble.

G. There is a lot of noise in the hallways during classes.

H. It is easy to cut class and get away with it.

I. Many students roam the hallways during classes.

J. There is a lot of graffiti on the walls.

Students' Perception of Support from Teachers (11-item scale)

Variable Name: TCHSUPP

Response Categories: 1=None; 2=One or Two; 3=Most; 4=All

Procedure: A two-step process was used to construct this measure. First, each of the items were standardized (converted into z-scores). Next, the TCHSUPP variable was calculated as the mean of each standardized item. Items "J", and "K" were reverse coded.

Standardized Reliability Alpha =.8021

"Think about the teachers with whom you are currently taking courses. How many of your teachers . . .?"

A. really listen to what you have to say?

B. care about you as a person?

C. show respect for their students?

D. know your name?

E. are good teachers?

F. would give you extra help if you needed it?

G. expect you to work hard in class?

H. help you to understand how the things you're learning in different subjects fit together?

I. teach you things you already know?

J. cannot control their classrooms?

K. often allow students to sit around and do nothing?

Students' Level of Classroom Participation in English and Math (6-item scale)

Variable Name: CLASPAR

Response Categories: 1=Several Times per Week; 2=Once or Twice per Week;
3=Once or Twice per Month; 4=Never

Procedure: A two-step process was used to construct this measure. Each of the items were standardized (converted into z-scores). The CLASPAR variable was calculated as the mean of each standardized item. All six items were reverse coded.

Standardized Reliability Alpha = .7652

"About how often have the following happened in your MATH class this school year?"

I. You paid attention in class.

J. You worked as hard as you could in class.

M. You felt smart and confident about something.

"About how often have the following happened in your ENGLISH class this school year?"

J. You paid attention in class.

K. You worked as hard as you could in class.

N. You felt smart and confident about something.

Classroom Turbulence (4-Items)

Variable Name: TURBUL

Response Categories: 1=None; 2=One; 3=Two; 4=Three; 5=More Than 3

Procedure: A two-step process was used to construct this measure. First, each of the items were standardized (converted into z-scores). Next, the TURBUL variable was calculated as the mean of each standardized item.

Standardized Reliability Alpha =.6746

"Please answer the following questions about your classes this school year. In how many of your classes. . . ? "

A. were there not enough chairs or desks for students?

B. was the teacher you started with replaced by another teacher?

C. were there not enough textbooks for each student ?

D. were there not enough supplies such as calculators, rulers, or microscopes to go around?

Students' Perception of School Climate (13-Items)

Variable Name: CLIMATE

Response Categories: 1=No Problem ; 2=Minor Problem; 3=Moderate Problem;
4=Serious Problem

Procedure: A two-step process was used to construct this measure. First, each of the items were standardized (converted into z-scores). Next, the CLIMATE variable was calculated as the mean of each standardized item. All 13 items were reverse coded.

Standardized Reliability Alpha = .8654

"Please tell us how much each of the following is a problem in your school."

A. Students coming late to school

B. Fighting among students

C. Vandalism of school property such as graffiti

D. Students who are absent a lot

E. Students who are not interested in learning

F. Students using or selling drugs at school

G. Students bringing weapons to school

H. Class cutting

I. Students under the influence of alcohol while at school

J. Students disrespecting or talking back to teachers

K. Cheating on tests or written assignments

L. Teachers who are absent a lot

M. Teachers who disrespect students

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Students' Educational Aspirations Perception (4-Items)

Variable Name: EDASPIR

Response Categories: *see below*

Procedure: A two-step process was used to construct this measure. First, each of the items were standardized (converted into z-scores). Next, the EDASPIR variable was calculated as the mean of each standardized item. Items "B", "C" and "D" were reverse coded.

Standardized Reliability Alpha = .6985

Item A: "As things stand now, how far in school do you think you will get?"

1. Less than high school graduation
2. High school diploma only
3. Some college
4. College graduate
5. Graduate or professional degree

Item B: "Which of the following do you believe is most likely to happen?

1. You will graduate on time
2. You will graduate early (less than 4 years)
3. You will graduate late (more than 4 years)
4. Not sure when you will graduate

Item C: "How sure are you that you will graduate from high school?"

1. Very sure you will graduate
2. You will probably graduate
3. You probably won't graduate
4. You definitely won't graduate

Item D: "How sure are you that you will go to a two-year or four-year college after leaving high school?"

1. Very sure you will go to college
2. You will probably go to college
3. You probably won't go to college
4. You definitely won't go to college

Ninth Grade Students' Adjustment to High School (6-Items)

Variable Name: ADJHS

Response Categories: 1=Strongly Disagree; 2=Disagree; 3=Agree; 4=Strongly Agree

Procedure: A two-step process was used to construct this measure. First, each of the items were standardized (converted into z-scores). Next, the ADJHS variable was calculated as the mean of each standardized item.

Standardized Reliability Alpha = .7320

"How much do you agree of disagree with the following questions?"

A. You have adjusted well to being in high school.

B. When you are having problems in class your teacher usually helps.

C. Teachers encourage you to consider going to college when you graduate from high school.

D. Your study skills and test taking skills have improved since the beginning of this school year.

E. In school, most of your friends care about getting good grades.

F. Your closest friends care about coming to school each day.

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Ninth Grade Students' Study Habits (4-Items)

Variable Name: STDYHAB

Response Categories: 1=Always; 2=Often; 3=Sometimes; 4=Seldom; 5=Never

Procedure: A two-step process was used to construct this measure. First, each of the items were standardized (converted into z-scores). Next, the STDYHAB variable was calculated as the mean of each standardized item.

Standardized Reliability Alpha = .7419

"Since the beginning of this school year, how often have the following things happened to you?"

A. You were not exactly sure how to study for a test.

B. You couldn't figure out how much time was needed to complete an assignment.

C. You were confused about how to take notes in class.

D. You forgot when your assignments or homework were due.

Self-Reported Number of Days Absent

Variable Name: ABSENT
Response Categories: see below

Procedure: The question below was used as a single item.

"How often were you absent from school without an excuse . . . since the beginning of this school year?

1. None (27.7%)
2. 1-5 absences (47.8%)
3. 6-10 absences (15.2%)
4. 11-20 absences (8.1%)
5. 21 or more absences (6.2%)

Self-Reported Grade Point Average

Variable Name: GPA
Response Categories: see below

Procedure: The self-reported grades item was recoded, where Mostly As=4; B=3; C=2; D=1; and Mostly Below D=0.05

"Which best describes the average grades you received in high school up to now?"

1. Mostly A's (a numerical average of 90-100) (15.5%)
2. Mostly B's (80-89) (35.5%)
3. Mostly C's (70-79) (38.4%)
4. Mostly D's (60-69) (8.6%)
5. Mostly below D (below 60) (2.1%)

Parents' Level of Education

Variable Name: PARED

Response Categories: see below

Procedure: Parents education was computed using a two-step. Both the mother's education and father's education items were standardized (converted into *z*-scores). Next, the PARED variable was calculated as the mean of each standardized item.

"What is your parent's or guardians highest level of education?"

Mother/Female Guardian:	*Father/Male Guardian:*
1. Did not complete high school	1. Did not complete high school
2. High school diploma or GED	2. High school diploma or GED
3. Some college	3. Some college
4. College graduate	4. College graduate
5. Graduate or professional degree	5. Graduate or professional degree

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Ninth Grade Students' Participation on Interdisciplinary Teacher Teams

Variable Name: TEAM

Response Categories: 1=Yes; 2=No; 3=Not Sure

Procedure: The participation in 9th grade teams item was computed by combining and recoding the two items below, where student responding "Yes" to both questions were coded as (Yes=1); and students respond "No" or "Not Sure" to either item were assigned the value of "0".

"The following questions are for 9th grade students."

A. Does some or all of your classes belong to a "team" along with other classes?

B. Does your "team" meet regularly for assemblies or other reasons?

Dichotomous Background Control Variables

Variable Names: MALE FEMALE ASIAN INDIAN BLACK HISPANIC WHITE OTHER RETAIN9

Response Categories: 1=Yes; 0=No

Procedure: Each of the above dichotomous variables identifies the existence of gender and ethnic-racial characteristics of students, except RETAIN9. The latter variable, is a proxy measure of whether or not a student was likely retained in grade prior to completing grade 9. Any 9th grade student 16 years or older during survey administration (Spring 2000) has a value of "1" and 9th graders under the age of 16 have a value of "0".

TABLE 1. Means, Standard Deviations and N of Cases for Selected Variables in the Full Sample (Grades 9 through 12) Compared to 9th Grade Respondents

	Full Sample			9th Grade		
	Mean	SD	N	Mean	SD	N
Dependent						
Failed a Course	.37	.48	10,841	.35	.48	3,403
Self-Reported GPA	2.55	.89	12,312	2.48	.93	3,871
Educational Aspirations*	.00	.74	12,254	-.12	.82	3,844
Independent						
Female	.51	.50	10,530	.49	.50	3,419
Male	.49	.50	10,530	.51	.50	3,419
Black	.60	.49	12,901	.64	.48	4,161
Hispanic	.12	.33	12,901	.14	.34	4,161
White	.17	.37	12,901	.11	.32	4,161
Asian /Asian American	.02	.15	12,901	.02	.12	4,161
American Indian	.04	.19	12,901	.04	.21	4,161
Parent's Education	.00	.90	12,151	-.08	.88	3,810
N of Absences	2.27	1.09	11,778	2.24	1.09	3,737
School Safety	.00	.49	13,461	-.02	.50	4,361
Teacher Support	.00	.58	13,372	.00	.59	4,324
Class Participation	.00	.69	13,106	-.03	.73	4,211
Classroom Turbulence	.00	.71	12,454	.03	.74	3,961
School Climate	.00	.62	12,503	.04	.64	3,959
Interdisciplinary Team**				.21	.41	3,661
Retained in/before Grade 9**				.17	.37	4,294
Adjustment to High School**				.00	.66	3,719
Study Habits**				.00	.75	3,647

* In separate regression models, students' educational aspirations was analyzed both as an independent and dependent variable.

** Reported by 9th grade students only.

TABLE 2. Maximum Likelihood Estimates of Effects of Log-Odds on Failing a Course During Ninth Grade (N=2870)

	Model I	Model II	Model III	Model IV
Intercept	-.64**	-.68**	-1.45**	-1.34**
Parents' Education		-.16**	-.14*	-.10
Female		-.16	-.15	-.07
Black		.16	.13	.13
Hispanic		.05	.07	.02
White		-.03	-.03	-.04
N of Days Absent			.34**	.30**
Retained in/before Grade 9			.12	-.01
Teacher Support				-.05
School Safety				-.14
Adjustment to High School				-.04
Study Habits				-.19**
Educational Aspirations				-.20**
Interdisciplinary Team				-.20
-2 log-likelihood		2397.668	2341.670	2310.115
Improvement in χ^2		10.52	66.52	98.08
Degrees of freedom		5	7	13
Percent concordant		65.6	67.1	67.1

Significant Levels of p *p<.05/ **p<.01

TABLE 3. OLS Coefficients from the Regression of Ninth Grade Students' Perception Scales on Self-Reported GPA (N=2866)

	Model I		Model II		Model III	
Variables	Beta	t	Beta	t	Beta	t
Intercept		45.41**		45.38**		45.58**
Female	.08	4.13**	.07	3.83**	.01	0.82
Black	-.09	-3.15**	-.09	-3.28**	-.11	-4.04**
Hispanic	-.05	-2.01*	-.06	2.26-	-.05	2.16-
White	.05	1.96*	.04	1.82	.05	1.95*
Parents' Education	.09	4.61**	.07	3.76**	.02	1.29
Retained in/before Grade 9			-.07	-3.70**	-.01	-0.53
N of Days Absent			-.28	-15.59**	-.21	-12.32
Teacher Support					.07	3.87**
Class Participation					.03	1.58
Educational Aspirations					.20	10.42**
Adjustment to High School					.06	3.01**
Study Habits					.09	4.83**
Interdisciplinary Team					.04	2.61**
R^2		.024		.108		.196
Standard Error (*estimate*)		.9233		.8831		.8392
Degrees of freedom (*residual*)		2860		2858		2852

Significant Levels of p *p<.05/ **p<.01

TABLE 4. OLS Coefficients from the Regression of Ninth Grade Students' Perception Scales on Educational Aspirations (N=2866)

	Model I		Model II		Model III	
Variables	Beta	t	Beta	t	Beta	t
Intercept		-6.80		-7.79**		-5.355**
Female	.14	7.55**	.10	6.01**	.05	3.23**
Black	.09	3.27**	.09	3.41**	.06	2.25*
Hispanic	.01	0.20	.00	0.10	-.01	0.30
White	.00	-0.18	-.04	-1.53	-.04	-1.70
Parents' Education	.19	10.35**	.16	8.99**	.14	8.19**
Self-Reported GPA			.26	14.41**	.18	10.43**
Retained in/before Grade 9			-.16	-9.28**	-.12	-7.38**
N of Days Absent			-.12	-7.09**	-.10	-6.14**
Teacher Support					-.01	-0.27
Class Participation					.21	11.58**
Classroom Turbulence					-.02	-1.37
Adjustment to High School					.12	6.60**
Study Habits					.10	5.63**
Interdisciplinary Team					.02	1.30
R^2		.066		.198		.290
Standard Error (*estimate*)		.7928		.7352		.6926
Degrees of freedom (*residual*)		2860		2857		2851

Significant Levels of p *p<.05/ **p<.01